

# PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:  
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**Registered**

*PC entered*

**PCT**

INVITATION TO PAY ADDITIONAL FEES

(PCT Article 17(3)(a) and Rule 40.1)

**DUE ON DEC 13 2004**

*if*

Applicant's or agent's file reference  
10662-121PCT *CC*

International application No.  
PCT/CA2004/000907

Applicant

UNIVERSITE DE MONTREAL

Date of mailing  
(day/month/year)

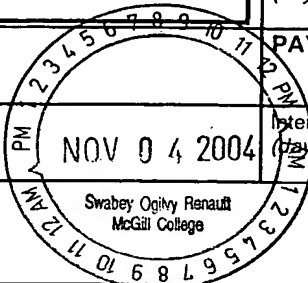
29/10/2004

**PAYMENT DUE**

within 45 ~~days~~ days  
from the above date of mailing

International filing date  
(day/month/year)

18/06/2004



1. This International Searching Authority

- (i) considers that there are 2 (number of) inventions claimed in the international application covered by the claims indicated ~~XXX~~ on the extra sheet:

and it considers that the international application does not comply with the requirements of unity of invention (Rules 13.1, 13.2 and 13.3) for the reasons indicated ~~XXX~~ on the extra sheet:

- (ii) ☒ has carried out a partial international search (see Annex) ☐ will establish the international search report on those parts of the international application which relate to the invention first mentioned in claims Nos.:  
see annex

- (iii) will establish the international search report on the other parts of the international application only if, and to the extent to which, additional fees are paid

2. The applicant is hereby invited, within the time limit indicated above, to pay the amount indicated below:

EUR 1.550,00 x 1 = EUR 1.550,00  
Fee per additional invention      number of additional inventions      total amount of additional fees

Or, \_\_\_\_\_ x \_\_\_\_\_ = \_\_\_\_\_

The applicant is informed that, according to Rule 40.2(c), the payment of any additional fee may be made under protest, i.e., a reasoned statement to the effect that the international application complies with the requirement of unity of invention or that the amount of the required additional fee is excessive.

3. ☐ Claim(s) Nos. \_\_\_\_\_ have been found to be unsearchable under Article 17(2)(b) because of defects under Article 17(2)(a) and therefore have not been included with any invention.

Name and mailing address of the International Searching Authority



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Authorized officer

Henriëtte Huysing-Solles

1. The present communication is an Annex to the invitation to pay additional fees (Form PCT/ISA/206). It shows the results of the international search established on the parts of the international application which relate to the invention first mentioned in claims Nos.:
- see 'Invitation to pay additional fees'
2. This communication is not the international search report which will be established according to Article 18 and Rule 43.
3. If the applicant does not pay any additional search fees, the information appearing in this communication will be considered as the result of the international search and will be included as such in the international search report.
4. If the applicant pays additional fees, the international search report will contain both the information appearing in this communication and the results of the international search on other parts of the international application for which such fees will have been paid.

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	DESVEAUX DARRELL ET AL: "A "whirly" transcription factor is required for salicylic acid-dependent disease resistance in Arabidopsis" DEVELOPMENTAL CELL, vol. 6, no. 2, February 2004 (2004-02), pages 229-240, XP002300472 ISSN: 1534-5807 the whole document	1-43
A	DESVEAUX DARRELL ET AL: "A new family of plant transcription factors displays a novel ssDNA-binding surface" NATURE STRUCTURAL BIOLOGY, vol. 9, no. 7, July 2002 (2002-07), pages 512-517, XP002300473 ISSN: 1072-8368 the whole document	1-43
A	DESVEAUX D ET AL: "PBF-2 is a novel single-stranded DNA binding factor implicated in PR-10a gene activation in potato" PLANT CELL, AMERICAN SOCIETY OF PLANT PHYSIOLOGISTS, ROCKVILLE, MD, US, vol. 12, no. 8, August 2000 (2000-08), pages 1477-1489, XP002243940 ISSN: 1040-4651 the whole document	1-43

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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

\* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \* & \* document member of the same patent family

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FAGOAGA CARMEN ET AL: "Increased tolerance to Phytophthora citrophthora in transgenic orange plants constitutively expressing a tomato pathogenesis related protein PR-5" MOLECULAR BREEDING, vol. 7, no. 2, 2001, pages 175-185, XP002300475 ISSN: 1380-3743 the whole document	
A	WO 01/29074 A (DANIEL XAVIER ; ROBY DOMINIQUE (FR); CENTRE NAT RECH SCIENT (FR); LACO) 26 April 2001 (2001-04-26) the whole document	
A	SINGH KARAM B ET AL: "Transcription factors in plant defense and stress responses" CURRENT OPINION IN PLANT BIOLOGY, vol. 5, no. 5, October 2002 (2002-10), pages 430-436, XP002300503 ISSN: 1369-5266 page 431, right-hand column page 433, right-hand column - page 434, left-hand column	
A	ANAND AJITH ET AL: "Greenhouse and field testing of transgenic wheat plants stably expressing genes for thaumatin-like protein, chitinase and glucanase against Fusarium graminearum." JOURNAL OF EXPERIMENTAL BOTANY, vol. 54, no. 384, March 2003 (2003-03), pages 1101-1111, XP002300474 ISSN: 0022-0957 the whole document	
A	DATABASE EMBL 11 January 2001 (2001-01-11), YAMADA K ET AL.: "Arabidopsis thaliana putative DNA-binding protein p24 (At1g14410) mRNA, complete cds." XP002300678 Database accession no. AF332452 the whole document	1-43
A	DATABASE EMBL 5 July 2002 (2002-07-05), YAMADA K ET AL.: "Arabidopsis thaliana unknown protein (At1g71260) mRNA, complete cds." XP002300679 Database accession no. AY122961 the whole document	1-43

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-43

mutants of proteins having the sequences SEQ ID NOs: 1 to 4,  
uses thereof,  
methods to increase pathogen resistance using the wildtype  
proteins having the sequences SEQ ID NOs: 1 to 4  
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2. claims: 44-46

methods to increase pathogen resistance using pathogenesis  
related (PR) genes  
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The following documents are considered to be relevant for the assessment of the unity of the invention:

D3: FAGOAGA CARMEN ET AL: "Increased tolerance to Phytophthora citrophthora in transgenic orange plants constitutively expressing a tomato pathogenesis related protein PR-5" MOLECULAR BREEDING, vol. 7, no. 2, 2001, pages 175-185

D4: WO 01/29074 A (DANIEL XAVIER ; ROBY DOMINIQUE (FR); CENTRE NAT RECH SCIENT (FR); LACO) 26 April 2001

D5: SINGH KARAM B ET AL: "Transcription factors in plant defense and stress responses" CURRENT OPINION IN PLANT BIOLOGY, vol. 5, no. 5, October 2002, pages 430-436

Documents D3, D4 and D5 disclose several approaches to improve the resistance of plants to pathogens, either by expression of transcription factors (D4, D5) or by expression of so-called PR genes (D3). In the light of these prior art documents D3, D4 and D5, the problem underlying the present application is to provide further approaches to improve the resistance of plants to pathogens and further proteins useful in these approaches, respectively.

The present application offers 2 solutions to this problem, as outlined in more detail above.

The single general concept covering all separate inventions is, according to the description, page 1, first paragraph, the notion that all the provided proteins are useful in approaches to improve the resistance of plants to pathogens.

This concept is known in the state of the art. As described in documents D3, D4 and D5, transcription factors (D4, D5) or the so-called PR genes (D3) have been employed to improve the resistance of plants to pathogens.

This takes away the linking concept possibly unifying the groups of inventions claimed in the present application.

As the single general concept is not novel, it cannot be the single general inventive concept required to be present by Article 3(4)(iii) and

Rule 13.1 PCT. When considering the whole set of claims in the light of the description, no further technical features could be identified, which could serve as same or corresponding technical features in the sense of Rule 13.2 PCT to restore unity of invention.

As prescribed in Article 17(3)(a) PCT, the invention first mentioned in the claims (subject 1, claims 1-43) has been the subject of the search. The subjects 1 and 2 are not linked by a general inventive concept and searching each subject requires a major search effort. Consequently, this invitation to pay additional fees has been formulated in accordance with Article 17(3)(a) PCT.

### Information on patent family members

PCT/CA2004/000907

Form PCT/ISA/206 (patent family annex) (July 1992; reprint January 2004)